

Claim 17 (New) A drum brake according to claim 15 wherein said damped steel
a5 comprises two sheets of steel of approximately equal thickness.

Please cancel claims ~~3, 5, 8, and 11.~~

REMARKS

Reconsideration of the rejection of the claims as unpatentable is respectfully requested in view of the above amendments and the following remarks.

The invention is the combination of an abutment plate and a shielding plate. The abutment plate is made of a material that is strong enough to resist the braking forces but is of reduced size so that it does not make a significant contribution to shielding the brake components from dust, dirt, and the like. Thus, the abutment plate can be relatively small when compared to the overall extent of the backing plate and, therefore, does not contribute significantly to the generation of NVH. The shielding plate, on the other hand, is larger and susceptible to generating significant NVH. According to the invention, however, the generation of NVH is avoided because the shielding plate is made of damped steel.

The Kaneshiro citation shows a backing plate where the entire backing structure is made of damped steel. This is not practical, as explained in paragraph 21 of the instant disclosure because the strength of the material that is required to resist the braking forces dictates a thickness of the steel layers that is too large for optimum dampening. Thus, Kaneshiro does not suggest the structure of the invention wherein an abutment plate is combined with a shielding plate of damped steel.

The Turak reference also fails to show or suggest the claimed invention. Turak teaches a large backing plate in combination with a small plastic rim that snaps onto the backing plate.

This arrangement clearly allows the backing plate to generate substantial NVH, which is directly opposed to the objects of the instant invention.

Furthermore, the claimed invention would not have been obvious to one of ordinary skill in the art in view of the references of record. The Hansen reference shows the structure of damped steel but contains no suggestion that would have led one of ordinary skill in the art to the invention. It appears that Hansen adds nothing to Kaneshiro, because Kaneshiro already teaches the use of damped steel for a backing plate. As pointed out above, that structure is not the claimed invention and suffers from the disadvantage that the steel must be too thick to obtain the required strength. Similarly, making the first part of the Turak structure of the Hansen material would not result in the claimed invention. Turak's teaching to use a small outer part of plastic that is snap-fitted onto the first part of the backing also constitutes a clear teaching away from making that small part of damped steel. Thus, the clear teaching of Turak is to have a large part of regular steel, which would generate large amounts of NVH and is directly opposed to the invention's aim of reducing NVH by providing the larger components of damped steel while providing other components to resist the braking forces.

Accordingly, it is submitted that this application is in condition for allowance, and an early indication thereof is respectfully requested. The examiner is invited to contact the undersigned if any matter remains outstanding.

All necessary extensions of time are requested. Please charge any necessary fees and credit any excess to deposit account 50-1088.

Respectfully Submitted,
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

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BARBOSA, M.

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Art Unit: 3683

Serial No.: 09/988,193

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Examiner: NGUYEN, Lan

Filed: November 19, 2001

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For: DRUM BRAKE BACKING PLATE

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GROUP 3600

Claim 1. (Amended) A backing plate comprising:

abutment plate means for resisting braking forces, and

a shielding plate [means for shielding] made of damped steel configured to shield brake components from dust and dirt and reducing noise and vibrations.

Claim 2. (Cancelled) A backing plate according to claim 1 wherein said shielding means is made of damped steel.

Claim 3. (Amended) A backing plate according to claim [2] 1 wherein said damped steel comprises outer and inner layers of steel and an inner layer of vibration dampening material, said layers of steel being of approximately equal thickness.

Claim 4. (Amended) A backing plate comprising an abutment plate having a first part configured to be attached to an axle of a vehicle and a second part configured to resist braking forces, and a shielding plate configured to shield brake components and made of [a material] damped steel that dampens noise and vibrations.

Claim 5. (Cancelled) A backing plate according to claim 4 wherein said material is damped steel.

Claim 6. (Amended) A backing plate according to claim [5] 4 wherein said damped steel comprises first and second layers of steel of approximately equal thickness.

Claim 7. (Amended) A backing plate according to claim 4 wherein said abutment plate is made of steel.

Claim 8. (Cancelled) A backing plate according to claim 7 wherein said material is damped steel.

Claim 9. (Amended) A shielding plate comprising a sheet of damped steel configured to be attached to a vehicle and to protect brake components from dust and dirt, and an abutment plate configured to engage brake shoes and to resist braking forces applied by said brake shoes.

Claim 10. A shielding plate according to claim 9 wherein said brake components are components of a drum brake.

Claim 11. (Cancelled) A shielding plate according to claim 10 in further combination with an abutment plate configured to engage brake shoes and to resist braking forces applied by said brake shoes.

Claim 12 (Amended) A shielding plate according to claim [11] 9 wherein said damped steel comprises first and second layers of steel on opposite sides of a dampening material, said first and second layers having approximately equal thickness.

Claim 13. (New) A combination according to claim 1 wherein said abutment plate means and said shielding plate are attached to each other.

Claim 14 (New) A combination according to claim 1 wherein said shielding plate is configured to have a hydraulic cylinder mounted thereon.

Claim 15 (New) A drum brake comprising an abutment plate comprising a sheet of steel having a first part configured to attach to an axle housing and a second part configured to resist

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braking forces, and a shielding plate made of damped steel attached to said abutment plate and configured to support brake shoes.

Claim 16 (New) A drum brake according to claim 15 wherein said shielding plate is configured to receive a hydraulic cylinder.

Claim 17 (New) A drum brake according to claim 15 wherein said damped steel comprises two sheets of steel of approximately equal thickness.